

## special communication

# Advancing Nursing Practice: The Emergence of the Role of Advanced Practice Nurse in Saudi Arabia

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**BACKGROUND:** The roots of advanced practice nursing (APN) can be traced back to the 1890s, but the nurse practitioner (NP) emerged in Western countries during the 1960s in response to the unmet healthcare needs of populations in rural areas. These early NPs utilized the medical model of care to assess, diagnose and treat. Nursing has since grown as a profession, with its own unique and distinguishable, holistic, science-based knowledge, which is complementary within the multidisciplinary team. Today, APNs demonstrate nursing expertise in clinical practice, education, research and leadership, and are no longer perceived as “physician replacements” or assistants. Saudi Arabia has yet to define, legislate or regulate APN.

**AIMS:** This article aims to disseminate information from a Saudi APN thought leadership meeting, to chronicle the history of APN within Saudi Arabia, while identifying strategies for moving forward.

**CONCLUSION:** It is important to build an APN model based on Saudi healthcare culture and patient population needs, while recognizing global historical underpinnings. Ensuring that nursing continues to distinguish itself from other healthcare professions, while securing a seat at the multidisciplinary healthcare table will be instrumental in advancing the practice of nursing.

Today, advanced nursing practice (APN) is evident in both developed and developing countries. The World Health Organisation (WHO) supports its growth in order to meet growing global healthcare needs.<sup>1</sup> In 1999 the United Kingdom (UK) government called for senior clinical nurses to be partnered as equals with senior medical providers. Nurse consultants (NC) were appointed to the top of the clinical-academic ladder, keeping experienced nurse specialists in clinical practice to advance the research agenda and facilitate collaboration on service development.<sup>2,3</sup> In 2010 the Institute of Medicine (IOM) in the US called for nurses to be allowed to practice to the full extent of their education and to be partners with physicians in redesigning healthcare.<sup>4</sup> While it is not the intention of this article to

review the history of APN in countries outside of Saudi Arabia, a brief overview is necessary to contextualise how and why APN roles have emerged and their impact on healthcare provision internationally.

The International Council of Nurses (ICN) defines Advanced Practice Nursing thus:

“A Nurse Practitioner/Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master’s degree is recommended for entry level.”<sup>5</sup>

Globally APN shares some common features, alongside aspects that are unique to the needs of the coun-

try and the authority of bodies that regulate nursing.<sup>6</sup> Although there is evidence that English-trained nurses worked as APNs as early as the 1890s in Canadian outpost areas, the clinical nurse specialist (CNS) was the first to be formally recognized in the 1950s. CNSs responded to the needs of patients with chronic and complex conditions. NP roles developed later in the 1960s, primarily in response to unmet healthcare needs particularly in rural areas where primary care physicians were lacking.<sup>7-12</sup> Although advanced practice started with specialist nurses, the modern day APN is commonly recognized as the nurse practitioner (NP). Brooke and Rushforth (2011) describe the NP role as hybrid in nature, involving autonomous medical diagnosis. This may indicate why many countries are more concerned with its regulation.<sup>13</sup> North American nursing bodies strictly regulate APN via protected titles and post-masters level education board certification. The umbrella of advance practice includes the CNS, NP, certified nurse anesthetist (CRNA) and certified nurse-midwife (CNM).<sup>12</sup> The NP role in the UK is similar to that of North America, but the role of the AP specialty nurse is where improved outcomes have been demonstrated. Specialist practice denotes a specific area of practice and advanced practice a level of practice; both generalists and specialists may practice at an advanced level.<sup>14,15</sup> NC, at the top of the clinical ladder, are responsible for service development and setting research and education agendas; a doctorate is desirable.<sup>3</sup> While studying AP roles in the UK, US, Brazil and Thailand, Ketefian et al (2001) identified three common drivers for APN; the professionalization of nursing, its need to be autonomous and its role in meeting the country's health needs. They also recognized how each country had developed roles differently and with different levels of post basic education.<sup>16</sup>

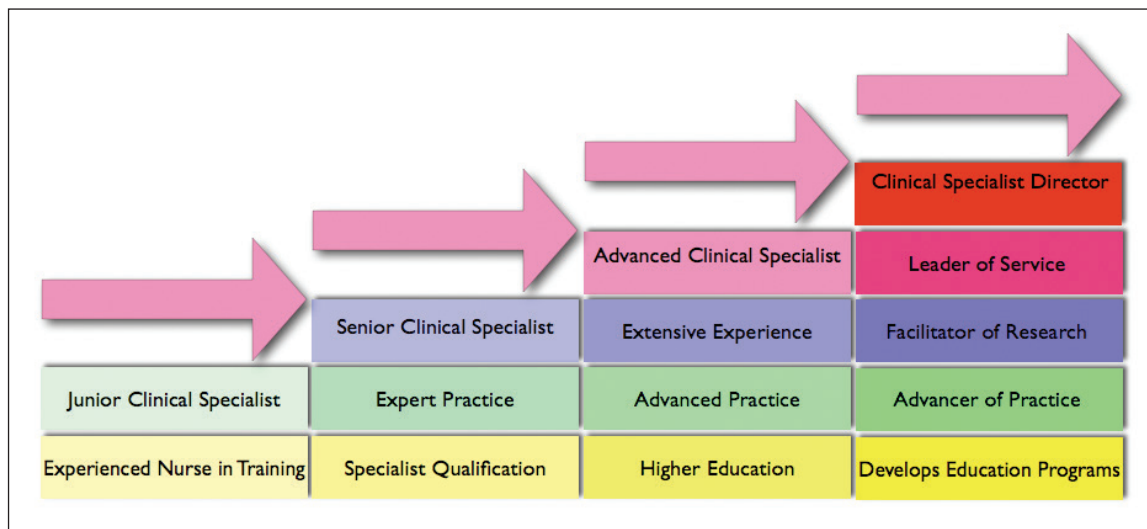
### *Nursing in Saudi Arabia*

The education of nurses in Saudi Arabia commenced in 1954, but nursing is not the preferred career choice, particularly for females due to cultural reasons and family challenges. The requirement to work night shifts and the poor image of nursing within the community compound these challenges.<sup>17</sup> Consequently the government is forced to increasingly depend on expatriates due to the rapid expansion of the Saudi Healthcare System.<sup>18</sup> According to the WHO (2015) the nursing ratio to population in Saudi Arabia was 48.7 to 10000, compared to Oman 53.8, the UK 88, Canada 92.9, Australia 106.5, Japan 114.9 and Qatar 118.7.<sup>19</sup> In an attempt to combat this, a number of universities now offer bachelors of science in nursing for males and females, while the masters of science in nursing is offered presently for

females only. Furthermore, international scholarships have been made available by governmental organizations to enable nurses to achieve nursing qualifications at all levels;<sup>18</sup> including clinical masters such as APN. Despite anecdotal information that Saudi nurses have studied APN at international universities, there is little information available on their career progression once they return to Saudi Arabia. Without standardization of a formal clinical career ladder along with titles and job descriptions reflecting role and scope of practice, these nurses will remain difficult to differentiate from other RNs and will not fulfill the role for which they have been educated.

The Saudi Commission for Health Specialties (SCFHS) designates nursing in line with level of education only; these designations are presently not aligned with job description titles, experience, roles or scopes of practice. According to the SCFHS the first level of nursing, defined as diploma level, is currently classified as "technical nursing"; this also applies to RNs with higher degrees in other health sciences. Nurses with a baccalaureate degree in nursing are designated as "specialists", despite not necessarily having specialty experience, certification, or a higher level of education. Nurses with a masters degree in nursing are classified as "Specialist 1", while nurses with a PhD and three years of experience are classified as "nurse consultant."<sup>20</sup> It will be important moving forward to differentiate clinical ladders from those of academia and leadership. The only evidence of implementation of a clinical ladder has been published previously<sup>21</sup> (**Figure 1**), but it has not been driven by the Ministry of Health (MOH) and so is not recognized within the official grading structure. This lack of recognition deters senior nurses from staying in clinical practice, making it difficult to meet the nation's growing healthcare needs.

The Saudi healthcare system is challenged by inadequate primary care provision, with insufficient general practitioners. Consequently, patients often resort to visiting the emergency room for non-emergent acute and chronic healthcare needs. As the Saudi population ages and the incidence and prevalence of chronic conditions such as diabetes and hypertension increase, the shortage of primary care providers is likely to have a significant negative impact on the Saudi healthcare system and its clients. Likewise there are a limited number of nurses qualified to care for patients with chronic conditions in specialty areas; these nurses are hampered in nurse-led clinics by a lack of autonomy to assess, diagnose and prescribe. Driven by increasing population needs nursing is advancing, but without recognition, definition, legislation or a regulatory framework.<sup>21,22</sup>



**Figure 1.** From Hibbert D, AlSanea N, Balens B. (2012) Perspectives on specialist nursing in Saudi Arabia: A national model for success. *Ann Saudi Med*; 32(1): 78-85.

### *Advancing the Practice of Nursing in Saudi Arabia*

Globally APNs have spent decades trying to ensure that others can distinguish their role from that of physician, but have not always been successful.<sup>23</sup> Now is an optimal time to define APN in Saudi Arabia, in a culturally appropriate way that utilises nursing as an effective resource for the health of its citizens. This requires legislation, the provision of higher education aimed at advanced practice, protection of titles and regulation of the scope of practice; ensuring knowledgeable experts are caring for patients safely and effectively while delivering patient centered care based on the latest evidence.

### *Chronicling the APN Story*

In telling the APN story in Saudi Arabia (**Table 1**) the authors admit a bias towards events at KFSHRC. Verbal communication from contacts at several larger hospitals suggests that there is wide support within the nursing community for APN. On the 17 March 2015 the first Saudi APN thought leadership event was held at the Four Seasons Hotel, Riyadh, sponsored by the Saudi Enterostomal Therapy Chapter of the Saudi Society of Colon and Rectal Surgery and hosted by Ms. Kathy Sienko, the then Deputy Executive Director for Nursing Affairs at KFSHRC. Nurse leaders and physicians from KFSHRC along with invited keynote speakers from the USA, UK and Saudi Arabia opened a dialogue aimed at facilitating discussion and debate. At this first thought leadership event in March 2015, a physician leader highlighted the need for wider en-

gagement beyond the group of nursing and physician "believers" who had convened. Hence on the 13 October 2015 the inaugural Saudi Advancing Nursing Practice Thought Leadership Event was held, the aim being to gather the collective experience and wisdom of national and international experts including APNs, nursing executives, academics, physician leaders and members of the SCFHS to inform a discussion on how nursing practice might be advanced in Saudi Arabia.

### *Inaugural National APN Thought Leadership Event*

This inaugural event was sponsored by Ms. Rosemarie Paradis, Executive Director of Nursing Affairs and led by Ms. Kathy Sienko, along with Ms. Denise Hibbert and Ms. Debra Forestell. The intent was not to discuss titles or roles but to focus on the enablers and obstacles to APN that may be experienced in any geography, while positioning the discussion within the context of KFSHRC and Saudi Arabia.

The goals and objectives of the event were to discuss the rationale, benefits and obstacles for introducing APN in both general and specialist organizations, engage stakeholders in the APN discussion, discuss cultural issues associated with the APN role, explore what it means to be an AP at the bedside, explore and achieve consensus on different types of roles under the APN banner, identify the organizational infrastructure required to support such roles, consider the legal and professional implications for Saudi Arabia, and understand the educational and board certification application to the Saudi context.

**Table 1.** The history of advanced practice nursing in Saudi Arabia.

Date	Event	Progression
1980s	KFSHRC Job Descriptions for Specialty Practice	Stoma, Wound, Continence, Pain, Infection Control, Palliative Care
1990s	KFSHRC APN Job Description	Developed without a nursing credentialing or privileging framework.
1990s	KFSHRC Policy on Non-Physician Prescribing	For Pharmacists and Nurses
Mar 2008	KFSHRC Clinical Ladder	Aimed at growing nurses in specialty practice from novice to expert, including APN and NC ( <b>Figure 2</b> ) <sup>20</sup>
Jun 2010	Recognition by the SCFHS of the Enterostomal Therapy Diploma Program	A 12-month full time program, incorporating both theoretical and clinical components, aimed at developing Saudi Nurses to care autonomously for patients with stomas, incontinence, defecatory dysfunction, and wounds, including nurse-led clinics <sup>5,20</sup>
Oct 2011	KFSHRC tasked APN proposal	Both general and specialty APN pathways were proposed, along with nursing credentialing and privileging.
Jun 2012	Publication: Specialist Nursing in Saudi Arabia	Perspectives on specialist nursing in Saudi Arabia: A national model for success <sup>20</sup>
Jan 2013	KFSHRC Nurse Credentialing & Privileging Committee	Nurse credentialing and privileging committee established.
Jan 2013	SCFHS Dialogue	Started dialogue with SCFHS
Jan 2014	Invited publication: ICN/APN Education Committee	Addressing issues impacting advanced nursing practice worldwide
Jan 2015	Invited publications: series based on the provision of specialty nursing services	1. Developing enterostomal therapy as a nursing specialty in Saudi Arabia: which model fits best? <sup>21</sup> 2. The development of nurse-led bowel dysfunction clinics in Saudi Arabia: against all odds <sup>22</sup>
Mar 2015	1st APN Thought Leadership Event Riyadh	KFSHRC nurse and physician leaders and APNs, aimed at opening a local dialogue
Oct 2015	1st Nursing Symposium aimed at APN in Saudi Arabia	KFSHRC Riyadh Biennial Nursing Symposium main theme APN. Nurses from Saudi Arabia, the Gulf and invited international experts shared their experiences.
Oct 2015	1st Inaugural Saudi APN leadership meeting	Aimed at starting a national APN dialogue
Oct 2015	Chair, SCFHS, Nursing Scientific Committee, announces support from SCFHS	Dr. Ahmad Aboshaiqah (Chair, Nursing Scientific Committee, SCFHS) announced his and the SCFHS support for discussion and planning for APN in Saudi Arabia, in particular the community NP role
Jan 2016	First two KFSHRC Saudi Nurse's appointed as APNs	Ms. Hajer AlSabaa and Ms. Haifaa Hussain returned from scholarships in the USA after gaining their APN Masters degree, employed in APN positions (Colorectal and Paediatric populations)
Sept 2016	ICN/APN Hong Kong podium presentations include Saudi Arabian perspective	1. An international forum to share innovation strategies and creative modalities in advanced practice. Beachesne, M., Scanlon, A., Carryer, J., Debout, C., East, L.A., Hibbert, d., Honig, J. 2. A survey of clinical education of APN: a global perspective. Beachesne, M., Scanlon, A., Carryer, J., Debout, C., East, L.A., Hibbert, D., Honig, J.

**Table 2.** Pearls of wisdom.

**Define:**

- Review and articulate what nursing is in Saudi Arabia
- What do nurses in Saudi provide that others do not?
- What do nurses bring to the health care table?

**Assess:**

- Review population health care needs – consider unmet needs
- Review present nursing education systems and processes
- Identify drivers, enablers and obstacles early in process

**Dos & Don'ts:**

- Don't just replicate what others have done – improve upon it.
- Don't wait to be informed or given permission.
- Do look at education, practice, policy, legislation and regulation in concert.
- Do protect titles.
- Do ensure patient safety.

2, while laying the foundations for APN demonstrated by **Figure 3**. Ensuring that we remember the importance of caring for patients today, utilizing available human resources, while planning for the future of Saudi APN was one of the core themes (**Figure 4**). In moving forward, it is imperative that the MOH provides leadership in gathering experts to focus on the vision of APN (**Table 3**).

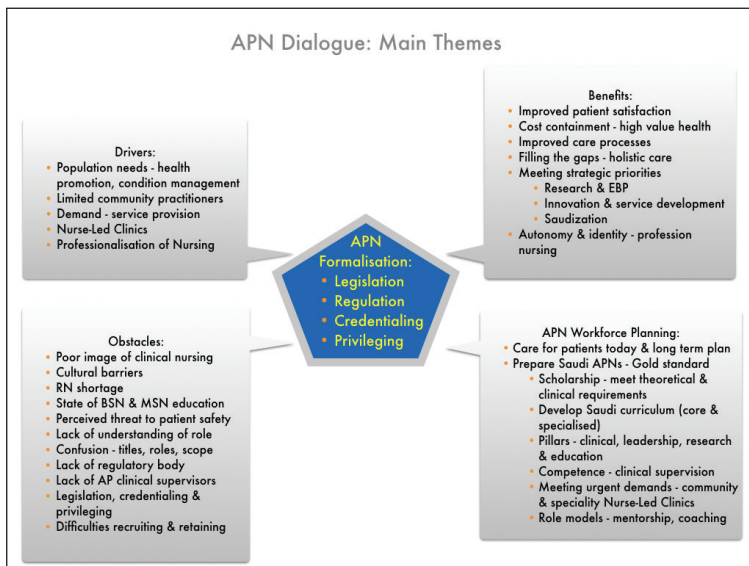
## DISCUSSION

Internationally there is understanding that the NP role fulfills a hybrid function, made possible by attaining a combination of nursing and medical knowledge and skills. In the USA, NPs and CNSs are strictly regulated, have protected titles, credentialing and privileging.<sup>25</sup> Despite specialist advanced practice being evident since the 1900s<sup>26,27</sup> there is still little consensus about these roles. In the UK support for role development has been driven by population needs and supported by the public and charitable organisations.<sup>28</sup> There is a need for clarity with respect to areas of practice as well as the need to work towards registration and regulation in other countries.

The complexity of advanced practice in long-term conditions is well established. A good example is the management of hemoglobinopathy. Psychological assessment is thought to be a vital part of caring for patients with sickle cell disease. A study in the US reported sufferers had three times the risk of depressive symptoms than those without.<sup>29</sup> These APNs independently manage patients' pain in ambulatory care and reduce the need for hospitalisation.<sup>30</sup>

The unique selling point of advanced practice roles is not only the ability to manage complex care, but also to promote self-management. Far from being a simple physician substitute, a new kind of worker has evolved to meet patient needs often working well with physicians as part of a multidisciplinary team. Specialist nurses are attributed with adding value to the quality of care, being valued by both patients and other health-care providers as the "key accessible professional."<sup>31,32</sup> Literature is emerging to suggest that specialty and community APNs are becoming invaluable in relation to service development, patient safety and quality of care in chronic conditions such as diabetes, bowel disease, Parkinson's disease, heart failure, multiple sclerosis and many more.<sup>33</sup> A rheumatology Specialty Nurse saved £300,000 a year by saving on physician time and reducing admissions.<sup>31,34</sup> Specialty APNs involved in cancer care saved approximately £19 million.<sup>35,36</sup>

It is imperative to have a comprehensive, culturally tailored approach to the Saudi Arabian primary health-



**Figure 2.** Advancing the practice of nursing: dialogue main themes.

### APN Dialogue

Following introductory presentations on APN globally and the experience in Saudi Arabia, a round table dialogue ensued which was enthusiastic, motivational and fruitful. The pearls of wisdom (**Table 2**) led to an agreement on the main themes represented in **Figure**



**Table 3.** Moving Forward and Formulating a National Strategy.

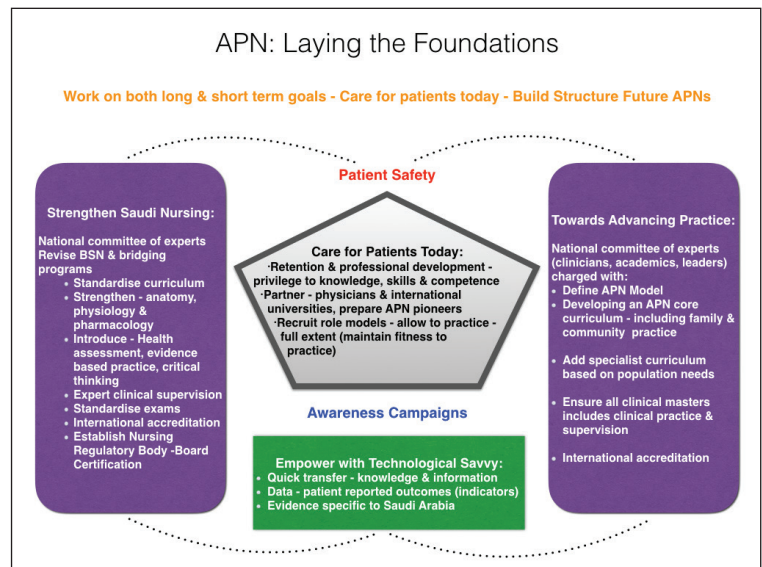
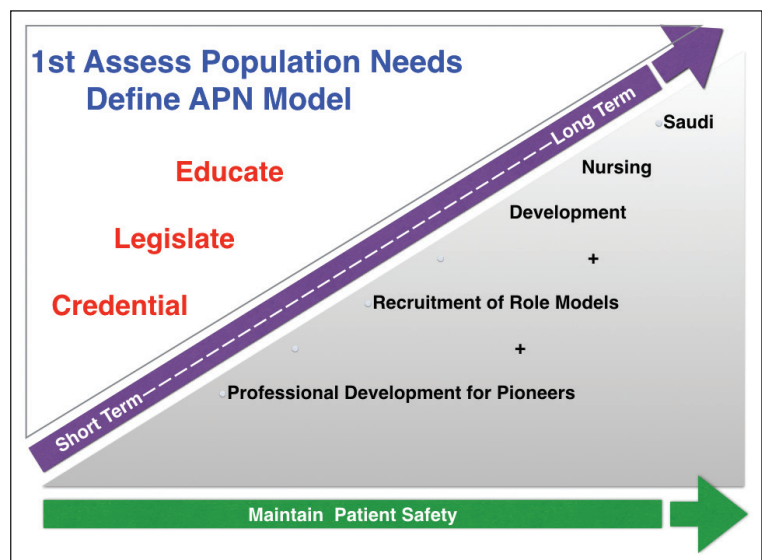
- Assign a National committee of stakeholders (senior clinical nurses, academics, executives, senior physicians, government representatives, patient representatives, credentialing experts and legal advisors)
- Formalization – Legislate to enabling nurses to prescribe care within remits of proven knowledge, skills and competence
- Review and recognize Saudi APN models of care – search for excellence in practice and patient outcomes, across generalist and specialist practice and community and hospital services – develop models along with indicators
- Search for gaps in health promotion, disease prevention and condition management including self management in chronic and debilitating conditions
- Assess population of tomorrow – 2030 vision and strategic priorities
- Establish agreed vision for the models of APN based on population needs
- Recruit experienced APNs - clinical academics into senior positions to coach and mentor scholarship nurses – collaborate with international universities with clinical practice collaborations
- Establish a nursing curriculum committee aimed at standardizing degree and masters level education across Saudi Arabia. Build on this with APN modules generalist and specialist including clinical practice and supervision- accreditation and regular reaccreditation

care model and in caring for patients with chronic or complex conditions. This should include urgent reforms to ensure that there are adequate numbers of well-trained BSN nurses to provide high-quality nursing care, while paving the way for them to assume the role of the APN.

## CONCLUSION

Despite the lack of legislation and regulation, APN has existed in Saudi Arabia since the 1990s, with patient needs driving its development ahead of formalisation. It is important to care for patients today while laying solid foundations for our APNs of the future. Due to the shortage of Saudi nurses, experienced expatriates are hired into APN roles. If prevented from practicing, as they are entitled to in their country of origin, they are difficult to retain. The need to address legislation is urgent; formal regulation will only be possible once nursing education is

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**Figure 3.** Laying the foundations.**Figure 4.** Care for patients today and plan for the future of advance practice nursing.

standardised and the profession of nursing is regulated. For pioneer APNs it is suggested that any missing educational preparation be obtained by organisations partnering with international universities. In the meantime nursing needs to step up and grasp the many opportunities that exist for the development of advanced practice roles in primary care and with specialty populations.

## REFERENCES

1. World Health Organization Brief Intervention Study G. WHO Nursing and Midwifery Progress Report 2008-2012. Report. Switzerland 2013 2008-2012. Report No.: ISBN 978 92 4 150586 4.
2. Department of Health. Advanced Nursing Practice-A Position Statement. London: DOH; 2010.
3. Department of Health. Nurse, midwife and health visitor consultants : establishing posts and making appointments. UK: Department of Health; 1999.
4. Institute of Medicine. The Future of Nursing: Leading Change, Advancing Health. Washington DC2010.
5. International Council of Nurses. The Future of Nursing Leading Change. Washington DC2013.
6. Kleinpell R, Scanlon A, Hibbert D, et al. Addressing Issues Impacting Advanced Nursing Practice Worldwide. Online J Issues Nurs 2014;19:5.
7. Peplau HE. Specialization in Professional Nursing. Nursing Science 1965;3:268-87.
8. Graydon J, Hendry J. Outpost nursing in Northern Newfoundland. The Canadian nurse 1977;73:34-7.
9. Stilwell B, Greenfield S, Drury M, Hull FM. A nurse practitioner in general practice: working style and pattern of consultations. J R Coll Gen Pract 1987;37:154-7.
10. Storr G. The clinical nurse specialist: from the outside looking in. Journal of advanced nursing 1988;13:265-72.
11. Manley K. A conceptual framework for advanced practice: an action research project operationalizing an advanced practitioner/consultant nurse role. Journal of clinical nursing 1997;6:179-90.
12. Hamric AB, Hanson CM. Educating advanced practice nurses for practice reality. Journal of professional nursing : official journal of the American Association of Colleges of Nursing 2003;19:262-8.
13. Brook S, Rushforth H. Why is the regulation of advanced practice essential? British journal of nursing 2011;20:996, 8-1000.
14. Scottish Government Health Department. Supporting the Development of Advanced Nursing Practice: A Toolkit Approach 2008.
15. National Leadership and Innovation Agency. Framework for Advanced Nursing, Midwifery and Allied Health Professional Practice in Wales. 2010.
16. Ketefian S, Redman RW, Hanucharunkul S, Masterson A, Neves EP. The development of advanced practice roles: implications in the international nursing community. International nursing review 2001;48:152-63.
17. Al-Mahmoud S MP, Spurgeon P. Saudisation of the nursing workforce: Reality and myths about planning nurse training in Saudi Arabia. J Am Sci 2012;8:369-79.
18. Gazzaz L. Saudi nurses' perceptions of nursing as an occupational choice: A Qualitative interview study. Nottingham: Nottingham; 2009.
19. World Health Organisation. World Health Statistics 2015. Switzerland: WHO; 2015.
20. Saudi Commission for Health Specialties. Guideline of Professional Classification and Registration for Health Practitioners. Saudi Arabia: SCFHS; 2014.
21. Hibbert D, Al-Sanea NA, Balens JA. Perspectives on specialist nursing in Saudi Arabia: a national model for success. Annals of Saudi medicine 2012;32:78-85.
22. Hibbert D, Rafferty L. The development of nurse-led bowel dysfunction clinics in Saudi Arabia: against all odds. Gastrointestinal Nursing 2015;13:33-40.
23. Bryant-Lukosius D, Dicenso A, Browne G, Pinelli J. Advanced practice nursing roles: development, implementation and evaluation. Journal of advanced nursing 2004;48:519-29.
24. Hibbert D, Al-Dossari R. Developing enterostomal therapy as a nursing specialty in Saudi Arabia: which model fits best? Gastrointestinal Nursing 2015;13:41-8.
25. APRN Consensus Work Group & The National Council of State Boards of Nursing. Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education. USA2008.
26. De Witt K. Specialties in Nursing . The American Journal of Nursing 1900;1:14-7.
27. Reiter F. The nurse-clinician. Am J Nurs 1966;66:274-80.
28. Trevatt P, Leary A. A census of the advanced and specialist cancer nursing workforce in England, Northern Ireland and Wales. European journal of oncology nursing : the official journal of European Oncology Nursing Society 2010;14:68-73.
29. Jenerette C, Funk M, Murdaugh C. Sickle cell disease: a stigmatizing condition that may lead to depression. Issues Ment Health Nurs 2005;26:1081-101.
30. Lee L, Askew R, Walker J, Stephen J, Robertson-Artwork A. Adults with sickle cell disease: an interdisciplinary approach to home care and self-care management with a case study. Home Healthc Nurse 2012;30:172-83; quiz 83-5.
31. Oliver S, Leary A. Return on investment: workload, complexity and value of the CNS. British journal of nursing 2012;21:32, 4-7.
32. Mynors GP, S. Morse, M. Defining the Value of MS Specialist Nurses2012.
33. COI Prime Minister's Commission on the Future of Nursing and Midwifery in England. Front Line Care: Report by the Prime Minister's Commission on the Future of Nursing and Midwifery in England. London2010.
34. RCN., Leary A, Oliver S. Clinical nurse specialists: adding value to care. London2010. Report No.: 003 598.
35. Frontier Economics. One to one support for cancer patients: A REPORT PREPARED FOR DH. London2010.
36. Baxter J, Leary A. Productivity gains by specialist nurses. Nursing times 2011;107:15-7.